PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Honeywell Docket No. H0002385
(MBHB Case No. 07-166)

In re the Application of:	)	
	)	
Soehren et al.	)	Group Art Unit: 3736
	)	
Serial No.: 10/634,931	)	Examiner: Jeffrey G. Hoekstra
	)	
Filed: August 5, 2003	)	Confirmation No.: 3825
	)	
For: Human Motion Identification	)	FAX NO. (571) 273-8300
And Measurement System	)	TOTAL PAGES: 11
And Method	)	

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

FACSIMILE TRANSMITTAL LETTER

In regard to the above identified application:

1.   We are transmitting herewith the attached
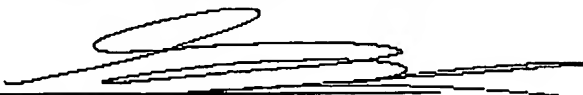
<u>Reply Brief</u>

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3. CERTIFICATE UNDER 37 CFR 1.8(a). The undersigned hereby certifies that this Transmittal Letter
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Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, ATTN:
Jeffrey G. Hoekstra.

Respectfully Submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: <u>April 9, 2007</u>   By _____

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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REPLY BRIEF

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I.   Introduction

This Reply Brief addresses the specific arguments made in the Examiner's Answer (mailed February 7, 2007) to Applicants' Appeal Brief. Applicants respectfully submit that the Examiner's Answer does not sufficiently rebut Applicants' arguments explaining why the present rejections are improper.

II.   Argument

1.   The Examiner Erred in Rejecting Independent Claim 4 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,013,007 (Root).

The Examiner erred in rejecting independent claim 4 under 35 U.S.C. § 102(b) as being anticipated by Root, because Root fails to disclose each and every element of independent claim 4. Namely, Root fails to disclose "a motion classification unit connected to receive data from said motion sensors and generate therefrom a motion type indicator signal."

In attempting to establish an anticipation rejection of independent claim 4, in the Examiner's Answer, the Examiner argued that the CPU 602 disclosed in Root anticipates the "motion classification unit." Specifically, the Examiner asserted that the CPU 602 "generates an output signal indicative of a motion type (e.g. the magnitude of velocity, speed, and/or direction of motion positively recited in column 7 lines 35-50)." Examiner's Answer, pg. 16. However, contrary to the Examiner's assertion, velocity, speed, and direction (more generally, location, speed, and direction) simply fall short of the motion types classified by the "motion classification unit."

As disclosed in Root, the CPU 602 operates in conjunction with a global positioning satellite (GPS) system. Root, col. 5, lines 38-42. Typical of a GPS system, the CPU 602 enables

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the GPS system to provide information relating to a person's location, speed, and direction. Root, col. 7, lines 35-40.

Employing a GPS system to determine an object's location, speed, and direction is arguably common in today's commercial applications. In fact, the present application even discloses using a GPS system and other related systems to determine information about a person's location, speed, and direction. *See, e.g.*, specification, pg. 10, lines 3-6 (" . . . a Global Positioning Satellite (GPS) unit or Differential Global Positioning Satellite (DGPS) unit 40 is connected to the input preprocessing unit 32 to provide pseudo-range or delta range information."); specification, pg. 11, line 21 – pg. 12, line 3 ("The inertial navigation unit 26 outputs information . . . to a Position, Individual Movement unit (PIM) 48. Such a Position, Individual Movement unit 48 may have a geographic function. The PIM unit can also be described as a position, velocity and altitude or orientation unit.").

However, the present application goes further than simply providing information relating to the output of a GPS system (i.e., a person's location, speed, and direction). Specifically, the disclosed "motion classification unit" actually classifies types of motions. For instance, the classified motion types may include "standing (no motion), walking (slow motion), or running (fast motion)" (specification, pg. 8, lines 10-11), as well as, "walking forwards, walking backwards, walking sideways, walking up or down a slope, walking up or down stairs, turning left and right and running, etc." Specification, pg. 8, lines 18-20.

Providing information beyond a person's location, speed, and direction (i.e., providing information beyond what a GPS system typically provides), and actually providing information relating to a motion type a person may be engaged in, offers at least one distinct advantage. For

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instance, the motion type may indicate whether a medical emergency exists. *See e.g.,* specification, pg. 11, lines 3-8 (". . . the alarm 46 may sound to indicate that the person being monitored has fallen . . . . The alarm is useful to indicate that the person being monitored needs prompt medical attention.").

Furthermore, not only does the "motion classification unit" provide information beyond the typical output of a GPS system (i.e., a person's location, speed, and direction), the present application specifically differentiates between the outputs of the "motion classification system" (i.e., the motion types) and the GPS system. *See, e.g.,* specification, pg. 12, lines 4-9 ("The input preprocessing unit 32 receives the motion type data from the motion classification unit 28, . . . [and] the pseudo-range or delta range information from the Global Positioning Satellite (GPS) system or differential global positioning satellite system (DGPS) 40 . . . ."); specification, pg. 8, lines 8-13 (". . . the motion identification apparatus 12 measures the location of the person 10, the distance moved *and a classification* of the motion, whether it be standing (no motion), walking (slow motion), or running (fast motion). The positional information *may also help classify the motion* as to sitting, standing or laying down, if the person is stationary, or may identify the motion as climbing stairs, for example.") (emphasis added).

Moreover, the Examiner's interpretation of "motion classification unit" and "motion type" is simply inconsistent with the specification. Although Applicants agree with the Examiner's observations that the motion types of standing, walking, running, etc., are not recited in the claim language, and that limitations from the specification cannot be read into the claims, the interpretation of "motion classification unit" and "motion type" must nonetheless be consistent with the specification. *See* M.P.E.P. § 2111.

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Contrary to the specification, the Examiner seemed to argue that the motion types classified by the "motion classification unit" may be interpreted to be the same as information relating to a person's location, speed, and direction, which is typically provided by a GPS system. This interpretation is wholly inconsistent with the specification, because the present application specifically differentiates the motion types classified by the "motion classification unit" and the output of the GPS system. For instance, the specification particularly indicates that the input preprocessing unit 32 receives motion type data from the motion classification unit 28 *and also* receives pseudo-range or delta range information from the GPS system. Specification, pg. 12, lines 4-9. Hence, the Examiner's attempt to equate "motion type" data provided by the "motion classification unit" with information relating to a person's location, speed, and direction, which is provided by a GPS system, is inconsistent with the specification. Therefore, in accordance with the M.P.E.P, the Examiner's interpretation of these claim terms is incorrect.

For the foregoing reasons, the cited portion of Root fails to disclose "a motion classification unit connected to receive data from said motion sensors and generate therefrom a motion type indicator signal." Therefore, Root fails to disclose each and every element of independent claim 4. As such, Applicants respectfully submit that the rejection of independent claim 4 is improper, and should be withdrawn. Further, as claims 5-9, 18 and 19 depend from and include all of the limitations of independent claim 4, the dependent claims 5-9, 18 and 19 are allowable for at least the reason they each depend from an allowable claim base.

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2.   **The Examiner Erred in Rejecting Independent Claim 15 under 35 U.S.C. § 102(b) as being anticipated by Root.**

The Examiner erred in rejecting independent claim 15 under 35 U.S.C. § 102(b) as being anticipated by Root, because Root fails to disclose each and every element of independent claim 15. Namely, the cited portion of Root fails to disclose "sensing motion . ... of a human" and "classifying the motion of the human sensed in the sensing step."

For the reasons set forth above, and as explained in Section 7(A)(ii)(c) of Applicants' Appeal Brief, the cited portion of Root fails to disclose using sensed motion to classify the motion of a human. Therefore, Root fails to disclose each and every element of independent claim 15. As such, Applicants respectfully submit that the rejection of independent claim 15 is improper, and should be withdrawn. Further, claims 16 and 17, which depend from and include all of the limitations of independent claim 15, are allowable for at least the reason they each depend from an allowable claim base.

3. .   **The Examiner Erred in Rejecting Independent Claim 1 under 35 U.S.C. § 103(a) as Being Obvious Over a Combination of Root and U.S. Patent No. 6,162,191 (Foxlin).**

The Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 103(a) as being obvious over a combination of Root and Foxlin, because the combination of Root and Foxlin fails to disclose each and every element of independent claim 1. Namely, the combination of Root and Foxlin fails to disclose "a motion classification unit."

For the reasons set forth above, Root fails to disclose "a motion classification unit." Further, as explained in Section 7(B)(ii)(a) of Applicants' Appeal Brief, the cited portion of Foxlin fails to make up for this deficiency in Root. In attempting to establish an obviousness

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rejection of this claim, the Examiner argued that processor 1326 of Foxlin is equivalent to the "motion classification unit" of the present application. However, this is simply not correct.

Rather than classifying motion types (i.e., standing, walking, running, etc.), the processor 1326 of Foxlin determines the angles (e.g., the yaw, pitch, or roll) that a human head may rotate. To correlate motion types classified by the "motion classification unit" with angular motions of a human head, as the Examiner seems to suggest, would also be inconsistent with the specification. To illustrate, the specification specifically indicates that a gyroscopic sensor may be used to detect angular motion, and that the output of the gyroscopic sensor may be provided to the "motion classification unit." Specification, pg. 9, lines 14-16. Since the output of the gyroscopic sensor is provided to the "motion classification unit," and since the specification specifically indicates that the "motion classification unit" provides its own output (i.e., it classifies motion types), equating angular motions detected by the gyroscopic sensor with motion types classified by the "motion classification unit" would be inconsistent with the specification. Because the cited portion of Foxlin fails to disclose classifying motion types, Foxlin fails to disclose or suggest a "motion classification unit."

Given that the combination of Root and Foxlin fails to disclose each and every element of independent claim 1, the Examiner has failed to make a *prima facie* case of obviousness of independent claim 1. Accordingly, Applicants respectfully submit that the Examiner's rejection of independent claim 1 is improper, and should be reversed.

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4.   **The Examiner Erred in Rejecting Independent Claim 2 under 35 U.S.C. §
103(a) as Being Obvious Over a Combination of Root and Foxlin.**

The Examiner erred in rejecting independent claim 2 under 35 U.S.C. § 103(a) as being

obvious over a combination of Root and Foxlin, because the combination of Root and Foxlin

fails to disclose each and every element of independent claim 2. Namely, the combination of

Root and Foxlin fails to disclose "sensors for sensing a human; an energy estimator unit and a

health monitor unit connected to receive data from said sensors; and a Kalman filter connected to

receive data from said sensors and having an output connected to said energy estimator unit and

said health monitor unit so that said energy estimator outputs an estimate of energy expended by

the human and so that said health monitor outputs an indication of health of the human."

As explained in Section 7(B)(ii)(b) of Applicants' Appeal Brief, the cited portion of Root

fails to disclose use of a Kalman filter. Although Foxlin discloses a Kalman filter, the cited

Kalman filter of Foxlin is used to compensate for the drift of inertial sensors. The cited portion

of Foxlin fails to disclose or suggest using a Kalman filter for providing inputs to an energy

estimator unit and a health monitor unit. Hence, the combination of Root and Foxlin fails to

disclose "sensors for sensing a human; an energy estimator unit and a health monitor unit

connected to receive data from said sensors; and a Kalman filter connected to receive data from

said sensors and having an output connected to said energy estimator unit and said health monitor

unit so that said energy estimator outputs an estimate of energy expended by the human and so

that said health monitor outputs an indication of health of the human."

Given that the combination of Root and Foxlin fails to disclose each and every element of

independent claim 2, the Examiner has failed to make a *prima facie* case of obviousness of

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independent claim 2. Accordingly, Applicants respectfully submit that the Examiner's rejection of independent claim 2 is improper, and should be reversed. Further, claim 3, which depends from and includes all of the limitations of independent claim 2, is allowable for at least the reason it depends from an allowable claim base.

5.   **The Examiner Erred in Rejecting Independent Claims 10 and 14 under 35 U.S.C. § 103(a) as Being Obvious Over a Combination of Root, Foxlin, and U.S. Patent No. 6,885,971 (Vock).**

The Examiner erred in rejecting independent claims 10 and 14 under 35 U.S.C. § 103(a) as being obvious over a combination of Root, Foxlin, and Vock, because the combination of Root, Foxlin, and Vock fails to disclose each and every element of the independent claims. Namely, the combination of Root, Foxlin, and Vock fails to disclose a "motion classification unit having outputs for data identifying motion type of the human . . . ."

From the reasons set forth above, and as explained in Section 7(C)(i)(b) of Applicants' Reply Brief, the combination of Root and Foxlin fails to disclose a "motion classification unit having outputs for data identifying motion type of the human . . . ." Further, the cited portion of Vock fails to make up for the deficiencies in Root and Foxlin. Vock discloses a loft sensor for detecting loft time, speed, power, and/or drop distance of a *vehicle*. Vock, Abstract. However, the cited portion of Vock fails to disclose a "motion classification unit having outputs for data identifying motion type of the *human* . . . ." (Emphasis added).

Given that the combination of Root, Foxlin, and Vock fails to disclose each and every element of independent claims 10 and 14, the Examiner has failed to make a *prima facie* case of obviousness of these claims. Accordingly, Applicants respectfully submit that the Examiner's rejection of independent claims 10 and 14 is improper, and should be reversed. Further, claims

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11-13, which depend from and include all of the limitations of independent claim 10, are allowable for at least the reason they each depend from an allowable claim base.
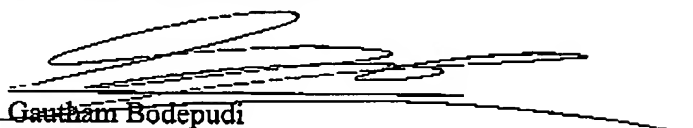
III.   Conclusion

Applicants respectfully submit that the rejection of claims 1-19 is in error as a matter of law. Applicants therefore request reversal of the rejections and allowance of all pending claims in this application.

Respectfully submitted,

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Date: April 9, 2007   By:

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